

Amendments to the Claims

1. (Currently Amended) Device for determining the position of ~~an in particular a~~ metallic target (50), particularly ~~for performing the method according to one of the claims~~ 16 to 24, with at least two detection devices (14, 24, 34) which are so positioned along a path (51) to be monitored that the sensitivity curve (15, 25, 35) of immediately adjacent detection devices (14, 24, 34) at least partly overlap, the detection devices (14, 24, 34) having in each case at least one ~~inductivity~~ (16, 26, 36) inductance coil and at least one oscillator (18, 28, 38) and, as a function of a distance of the target (50) from the detection device (14, 24, 34), supply a distance signal, with at least one converting device (19, 29, 39, 59) operatively connected to the detection devices (14, 24, 34) for converting the distance signals detected by the detection devices (14, 24, 34) into analogue signals, ~~particularly current and/or voltage signals,~~ and with at least one evaluating device (52) operatively connected to the at least one converting device ~~or devices~~ (19, 29, 39, 59) for determining and reading out a local position of the target (50) from analogue signals going back to the particular detection devices (14, 24, 34), a damping signal of the oscillator being in each case outputtable by the detection devices (14, 24, 34) as the distance signal, ~~characterized in that~~ wherein a damping curve of a detection device (14, 24, 34) in each case has partial areas with high positional resolution, ~~that~~ wherein the detection devices (14, 24,

~~34)~~ are so positioned that from the partial areas of high positional resolution of the individual detection devices ~~(14, 24, 34)~~ it is possible to compose a detection curve for the entire path to be monitored and ~~that~~ wherein the detection devices ~~(14, 24, 34)~~ are arranged in two, ~~particularly~~ parallel rows in mutually displaced manner for increasing the positional resolution.

2. (Currently Amended) Device according to claim 1, ~~characterized in that~~ wherein in the partial areas of high positional resolution the positional resolution is everywhere greater than 10%, ~~preferably everywhere greater than 20% and in particularly preferred manner everywhere greater than 40% of the maximum positional resolution.~~
3. (Currently Amended) Device according to ~~one of the claims~~ claim 1 to 2, ~~characterized in that~~ wherein the detection devices ~~(14, 24, 34)~~ are equidistantly arranged along the path.
4. (Currently Amended) Device according to ~~one of the claims~~ claim 1 to 3, ~~characterized in that~~ wherein there is a guide device for guiding the target ~~(50)~~ along the path to be monitored.

5. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 4,

~~characterized in that~~ wherein there is a target ~~(50)~~
movably positioned in the guide device.

6. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 5,

~~characterized in that~~ wherein
the detection devices ~~(14, 24, 34)~~ are so positioned
along the path to be monitored that they are in each
case only partly coverable by the target ~~(50)~~.

7. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 6,

~~characterized in that~~ wherein
the detection devices ~~(14, 24, 34)~~ are so positioned
along the path to be monitored that they are in each
case only 90%, preferably only 85% and in particularly
~~preferred manner only~~ 80% coverable by the target ~~(50)~~.

8. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 7,

~~characterized in that~~ wherein
the dimensions of the target ~~(50)~~ are so chosen or
formed that an individual detection device ~~(14, 24, 34)~~
can only be partly covered by the target ~~(50)~~.

9. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 8,

~~characterized in that~~ wherein
the target ~~(50)~~ is a small metal plate.

10. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 9,

~~characterized in that~~ wherein

with each detection device ~~(14, 24, 34)~~ is associated a
converting device ~~(19, 29, 39, 59)~~.

11. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 9,

~~characterized in that~~ wherein

there is at least one multiplexer ~~(54)~~ between a
converting device ~~(59)~~ and a plurality of detection
devices ~~(14, 24, 34)~~.

12. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 11,

~~characterized in that~~ wherein

~~the inductivities (16, 26, 36), particularly the~~
inductance coils of the detection devices ~~(14, 24, 34)~~
are arranged with their axes ~~transverse, particularly~~
perpendicular to the path ~~(51)~~ to be monitored.

13. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 12,

~~characterized in that~~ wherein

the ~~inductivity (16, 26, 36)~~ inductance coil is provided
as part of the oscillator ~~(18, 28, 38)~~ in at least part
of the detection devices ~~(14, 24, 34)~~.

14. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 13,

~~characterized in that~~ wherein

the detection devices ~~(14, 24, 34)~~ are so positioned
that the areal overlap of the sensitivity curves ~~(15,~~
~~25, 35)~~ or damping curves of mutually adjacent detection
devices ~~(14, 24, 34)~~ is between 20 and 50%, particularly
~~between~~ 25 and 35%.

15. (Currently Amended) Device according to ~~one of the claims~~
claim 1 to 14,

~~characterized in that~~ wherein

the detection devices ~~(14, 24, 34)~~ can in each case
determine a radial spacing of the target ~~(50)~~ from an
axis of the inductance coil ~~(16, 26, 36)~~.

16. (Currently Amended) Method for determining the position of
~~an in particular~~ a metallic target ~~(50)~~, in which at
least two detection devices ~~(14, 24, 34)~~ are so
positioned along a path ~~(51)~~ to be monitored that the
sensitivity curves ~~(15, 25, 35)~~ of directly adjacent
detection devices ~~(14, 24, 35)~~ at least partly overlap,
the detection devices ~~(14, 24, 34)~~ supplying a distance
signal as a function of the distance of the target, in
which the distance signals determined by the detection
devices ~~(14, 24, 34)~~ are converted by at least one
converting device ~~(19, 29, 39, 59)~~ into analogue
signals, ~~particularly current and/or voltage signals~~ and
in which from the different analogue signals going back
to the detection devices ~~(14, 24, 34)~~ the position of
the target ~~(50)~~ is determined in which the distance

signal is in each case constituted by damping signals of oscillators of detection devices ~~(14, 24, 34)~~, ~~characterized in that~~ wherein the detection device with the second highest damping is used for evaluating the damping signal.

17. (Currently Amended) Method according to claim 16, ~~characterized in that~~ wherein the detection devices ~~(14, 24, 34)~~ are positioned in such a way that a detection curve for the entire path to be monitored can be composed from partial areas with a high positional resolution of the damping curves of the individual detection devices ~~(14, 24, 34)~~ and that for determining the position of the target ~~(50)~~ the measured damping values can be compared with previously, ~~particularly punctiform~~ recorded teach-in data.
18. (Currently Amended) Method according to claim 17, ~~characterized in that~~ wherein for recording the teach-in data the target ~~(50)~~ is guided along the path to be monitored, the position of the target ~~(50)~~ and the respective damping signals of the detection devices ~~(14, 24, 34)~~ being locally recorded.

19. (Currently Amended) Method according to ~~one of the claims~~
claim 17 or 18,

~~characterized in that~~ wherein
on recording the teach-in data the position of the
target ~~(50)~~ is also varied transversely to the path to
be monitored and the respective positions and damping
signals are locally recorded.

20. (Currently Amended) Method according to ~~one of the claims~~
claim 16 to 19,

~~characterized in that~~ wherein
the sensitivity curves ~~(15, 25, 35)~~ of the detection
devices ~~(14, 24, 34)~~ are standardized.

21. (Currently Amended) Method according to ~~one of the claims~~
claim 16 to 20,

~~characterized in that~~ wherein
for evaluation purposes use is made of a pair of values
~~consisting of~~ comprising the damping signal with the
second highest and the highest damping.

22. (Currently Amended) Method according to ~~one of the claims~~
claim 17 to 21,

~~characterized in that~~ wherein
for determining the position of the target ~~(50)~~
interpolation takes place between points of the teach-in
data.

23. (Currently Amended) Method according to ~~one of the claims~~
claim 17 to 22,

~~characterized in that~~ wherein

portions of the damping curves are in each case
approximated by lines for evaluation purposes.

24. (Currently Amended) Method according to ~~one of the claims~~
claim 16 to 23,

~~characterized in that~~ wherein

for evaluation purposes, in each case, account is taken
of only one portion of a detection device ~~(14, 24, 34)~~
or that several detection devices ~~(14, 24, 34)~~ are
simultaneously evaluated and in particular ratios are
formed from the analogue signals.